Remarks

Claims 1-5, 10-20, 24-26, and 28-32 were previously pending in the subject application. By this Amendment, the applicant has amended claim 1. Favorable consideration of the claims now presented, in view of the amendment to claim 1 and the remarks set forth herein, is earnestly solicited.

The subject invention provides a unique solution to the longstanding problem of the buildup of static during the production of spunbond non-woven fabrics. The flow of air across the filaments in the spunbond process generates tremendous amounts of static buildup in the attenuation device, which inevitably leads to defects in the fabric. Therefore, a method is needed for efficiently reducing static. The subject invention, which involves feeding an additive into the extruder, is very advantageous because it reduces static with no color pollution, at minimal cost, with no blinding of filters or packs, and without introducing particulate matter into the melt stream.

Claims 1 and 2 have been rejected under 35 U.S.C. §103(a) as being obvious over Trimble (U.S. Patent No. 5,397,413) in view of Tortora (*Understanding Textiles*, pages 401 and 402). The applicant respectfully traverses this ground of rejection because the combination of references does not teach or suggest the claimed method that can be used to overcome the long-standing problem of static build-up in the spunbonding process.

Trimble teaches a standard spunbonding process with the steps of using a melt blend of a variety of polymer resins and mixtures thereof, extruding the material to form a plurality of filaments, directing the filaments through a slot draw attenuator, forming a web, and bonding the filaments. However, as the Examiner points out, Trimble does not mention adding an antistatic agent to the blend. In fact, Trimble recognizes the problem of static build-up but essentially teaches away from the current invention by describing the introduction of an electrostatic charge to the filaments as they exit the attenuator to make the filaments repel one another (see col. 5, lines 27-32).

The Tortora reference discusses using bicomponent fibers as additives to conventional synthetic fibers to dissipate static electric charges. The fibers of the Tortora reference are metal, metallized, or contain metal or carbon.

At page 13, the outstanding Office Action states that adding antistatic agents during the Trimble process is not contrary to its purpose because Trimble teaches electrical property manipulations that affect the product only during processing and does not exclude additional electrical property alterations. However, the applicant respectfully avers that one skilled in the art at the time of the applicant's invention would not have found motivation to seek out antistatic additives for the Trimble process. Because the main advantage of the Trimble process is to provide separation of the filaments by applying an electrical field, introducing any substance that would alter the electrical properties prior to the finished product would essentially defeat the purpose of using the Trimble process. Thus, one skilled in the art would have found no motivation to combine the bicomponent fibers of Tortora with the process of Trimble.

Furthermore, the bicomponent fibers taught by Tortora are metal, metallized, or contain metal or carbon black. Submitted with this amendment is an Expert Declaration of Albert E. Ortega under 37 CFR §1.132 in which Mr. Ortega discusses the disadvantages of using the additives disclosed by Tortora. Specifically, the use of metal or carbon black additives causes color pollution, is very expensive, and inserts a yarn or filaments with different orientation or physical properties than that of the filaments created by the spunbonded equipment. Color pollution is unacceptable in spunbonding processes as the color is very important for the final products. Additionally, the additives taught by Tortora introduce particulate matter into the melt stream, leading to frequent and expensive cleaning of the equipment used in spunbonding processes, such as the one taught in Trimble. Due to these negative effects caused by using these bicomponent fibers, one of ordinary skill in the art would have had no motivation at the time of the applicant's invention to use the fibers taught by Tortora with the Trimble process.

It is well established in the patent law that the mere fact that the purported prior art could have been modified or applied in some manner to yield an applicant's invention does not make the modification or application obvious unless "there was an apparent reason to combine the known elements in the fashion claimed" by the applicant. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___ (2007).

An assertion of obviousness without the required suggestion or expectation of success in the prior art is tantamount to using applicant's disclosure to reconstruct the prior art to arrive at the subject invention. Hindsight reconstruction of the prior art cannot support a §103 rejection, as was specifically recognized by the CCPA in *In re Sponnoble*, 56CCPA 823, 160 USPQ 237, 243 (1969).

As noted above, there would be no motivation to modify the teachings of the cited references in order to arrive at the current applicant's advantageous method. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on the Trimble patent in view of Tortora.

Claims 1-5, 14, 15, 17-20, and 26 have been rejected under 35 U.S.C. §103(a) as being obvious over Gillespie (U.S. Patent No. 5,783,503) in view of Tortora (*Understanding Textiles*, pages 153-157, 401, and 402). The applicant respectfully traverses this ground of rejection because the combination of references does not teach or suggest the applicant's claimed invention.

Gillespie teaches producing a spunbond product by originating filaments from a spinneret, attenuating and drawing the filaments through a slot draw apparatus, and depositing the filaments onto a collection surface to form a web. Gillespie does not, though, teach adding antistatic agents to the blend. As the Examiner points out, Gillespie mentions controlling electrical properties by incorporating certain additives into the polymer melt. In the Gillespie invention, this is done to make the filaments more splittable by creating polymers of suitably different properties that do not adhere well to one another (see col. 5, lines 35-42).

Gillespie makes no mention of static levels in the filaments exiting the attenuator or that this may be a problem. Moreover, Gillespie teaches that electrical properties should be controlled for the purpose of developing a triboelectric charge in the filaments to promote separation (see col. 9, lines 53-55). This creates a static charge so that an external electric field can be applied to the filaments to augment separation and control the web laydown (see col. 9, lines 53-60).

The bicomponent fibers mentioned by Tortora reduce static charges in synthetic fibers. Therefore, using these bicomponent fibers would lower the static charges in the filaments and

defeat the purpose of the method for producing the product taught by Gillespie, which is to promote separation of the filaments.

The outstanding Office Action states that adding antistatic agents during the Gillespie process is not contrary to its purpose since Tortora claims reduction, not elimination, of static buildup. However, since one of the main goals of the Gillespie process is to generate a triboelectric charge to promote separation of the filaments, introducing any substance that would reduce the static buildup prior to the finished product would essentially defeat the purpose of the process taught by Gillespie. Thus, one skilled in the art would have found no motivation to combine the bicomponent fibers of Tortora with the process of Gillespie.

In addition, as discussed above, using the bicomponent fibers taught by Tortora causes color pollution, is very expensive, introduces particulate matter into the melt stream, and inserts a yarn or filaments with different orientation or physical properties than that of the filaments created by the spunbonded equipment. Due to these negative effects, one skilled in the art would have had no motivation at the time of the applicant's invention to use the fibers taught by Tortora with the Trimble process.

With respect to claim 3, the Examiner states on page 5 of the December 12, 2006 Office Action that nylon 6 has a higher tenacity than nylon 6,6 and that this would have made it obvious to a skilled artisan to use nylon 6 with the Gillespie process. However, as Mr. Ortega discusses in his Expert Declaration, nylon 6,6 would actually be the initial choice for the process taught by Gillespie. Even though Tortora mentions the higher tenacity of nylon 6, one skilled in the art would know that strength is impacted by more factors than just tenacity. Thus, it would not have been obvious to a skilled artisan to use nylon 6 with the Gillespie process.

Combining Tortora with Gillespie would defeat the purpose of Gillespie. Thus, there is no motivation to modify the teachings of the cited references in order to arrive at the current applicant's claimed method. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on the Gillespie patent in view of Tortora.

Claims 10-13, 16, 24, 25, and 28-32 have been rejected under 35 U.S.C. §103(a) as being obvious over Gillespie (U.S. Patent No. 5,783,503) in view of Tortora (*Understanding*

Textiles, pages 153-157, 401, and 402) as applied to claims 1 and 17, further in view of Warburton (U.S. Patent No. 4,081,383). The applicant respectfully traverses this ground of rejection because the combination of references does not teach or suggest the claimed methods.

The shortcomings of the Gillespie and Tortora references have been discussed above in detail. Warburton does not cure, or even address, these shortcomings. Warburton teaches a composition and method for improving soil resistance of carpets. The process used is a low temperature system, with the highest temperatures coming in the curing after the carpets or yarns are coated. The curing temperature is less than 200 °C, preferably lower than 160 °C (see col. 7, lines 19-21). As Mr. Ortega discusses in his Expert Declaration, it is well known in the art that spunbonding processes must be accomplished above the melt point of the polymers used, which is above 200 °C. This applies to the Gillespie process which mentions temperatures over 200 °C as well (see col. 8, lines 46-53). Compounds used in low temperature systems often cannot be used in higher temperature systems due to decomposition temperatures of many compounds. On page 14 of the December 12, 2006 Office Action, the Examiner points out that the applicant's process being a high temperature system is not a claimed feature. The very fact that the claim recites a spunbond process necessarily requires the process to be carried out at high temperatures. Moreover, the relevance of the high temperature of the claimed process and the Gillespie process in comparison with the low temperature system of Warburton is that a skilled artisan would not have considered using compounds disclosed in a low temperature system as part of a high temperature process. Thus, it would not be obvious to one of ordinary skill in the art to use the compounds taught by Warburton in the high temperature system disclosed by Gillespie.

Therefore, the applicant respectfully submits that there is no motivation to combine the cited references to arrive at the claimed invention. See Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) ("When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself."). "The mere fact that elements of [an invention] may be found in various [references] does not necessarily negate invention." In re McKenna, 203 F.2d 717, 721, 97 USPQ 348, 351 (CCPA

1953). Additionally, the predecessor of the Federal Circuit has opined, "[i]n determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." In re Linter, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Therefore, " [w]hen determining the patentability of a claimed invention which combines two known elements, 'the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.' " See In re Beattie, 974 F.2d 1309, 1311-12, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992) (quoting Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)). Finally, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

As noted above, there would be no motivation to modify the teachings of the cited references in order to arrive at the current applicant's claimed method. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on the Gillespie patent in view of Tortora and Warburton.

Claims 10-13, 16, 24, 25, and 28-32 have been rejected under 35 U.S.C. §103(a) as being obvious over Gillespie (U.S. Patent No. 5,783,503) in view of Tortora (*Understanding Textiles*, pages 153-157, 401, and 402) as applied to claims 1 and 17, further in view of George (U.S. Patent No. 4,167,464). The applicant respectfully traverses this ground of rejection because the combination of references does not teach or suggest the claimed methods.

George teaches the preparation of highly water absorbent films and fibers by photopolymerizing various compounds. These compounds are dissolved in water and applied to a substrate and dried at about 50 ^{o}C (see col. 8, lines 64-65). This is a low temperature system and, as discussed above, a skilled artisan would have no motivation to use compounds from such a low temperature system in the high temperature process of Gillespie. In addition, the process used to create the interpolymer taught by George has nothing to do with, and

makes no mention of, spunbond, nonwoven fabrics or static dissipation. George is nonanalogous art and does not add to the combination of Gillespie in view of Tortora discussed above. Thus, one of ordinary skill in the art would not have found motivation to take the George compounds that are dissolved in water in a low temperature system and use them in the high temperature Gillespie process as part of a melt for a spunbond, nonwoven fabric to reduce static.

Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on the Gillespie patent in view of Tortora and George.

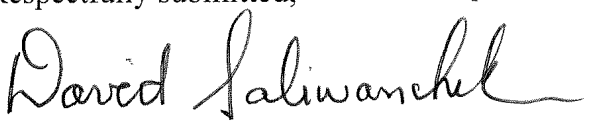
Furthermore, with respect to each of the rejections under §103(a), Federal Courts have held that satisfying a long felt-need and failure of others to achieve a satisfactory solution to a long-felt need both tend to show that an invention is not obvious. *Railroad Dynamics, Inc. v. A. Stucki Co.*, 579 F.Supp. 352, 218 USPQ 618 (E.D. Pa. 1983), *aff'd*, 727 F.2d 1506, 220 USPQ 929 (CAFC), *cert. denied*, 469 U.S. 871 (1984); *In re Tiffin*, 443 F.2d 394, 170 USPQ 88 (CCPA 1971); *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021 (CAFC 1984); *Dow Chemical Co. v. Halliburton Co.*, 631 F.Supp. 666, 227 USPQ 897 (N.D. Miss. 1985), *aff'd without op.*, 790 F.2d 93 (CAFC 1986). As Mr. Ortega discusses in the Expert Declaration, two companies skilled in the art were unable to solve the long-known problem of reducing the static buildup in a spunbond process. It was only when the applicant arrived at the claimed invention that a solution was found. Therefore, reconsideration and withdrawal of each of the rejections under §103(a) is respectfully requested.

In view of the foregoing remarks, the applicant believes that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicant also invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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Attachments: Request for Continued Examination
Expert Declaration of Albert E. Ortega under 37 CFR §1.132